EXHIBIT 28

DECLARATION OF ROB A. RUTENBAR

I, Rob A. Rutenbar, declare as follows:

1. I am the Senior Vice Chancellor for Research at the University of Pittsburgh ("Pitt") in Pittsburgh, Pennsylvania. I have held that position since 2017. In that position, I direct the Pitt Research Unit, which supports the full breadth of Pitt's research enterprise, from pursuing and securing funding and supporting Pitt principal investigators through effective research administration services.

2. I have personal knowledge of the contents of this declaration or have knowledge of the matters based on my review of information and records gathered by Pitt personnel and could testify thereto.

3. Pitt receives substantial annual funding from the National Science Foundation ("NSF"). In fiscal year 2024, Pitt had over $30 million in active NSF grants and cooperative agreements, including 79 new awards with total project costs of over $31 million. Pitt had over $90 million in active NSF awards during FY 2022-2024, including 195 new awards during that period, totaling over $87 million.

4. Pitt intends to apply for new funding awards, and/or renewals and continuations of existing funding awards, in the next year and in future years to come. The announced 15% rate cap will make many of the research projects Pitt would otherwise apply for or seek to renew or continue financially infeasible. Pitt will be in an impossible position. If it tries to use its negotiated indirect cost rate in proposals, which it believes it is entitled to do, it runs a serious risk of having its proposals rejected and losing the ability to conduct critical research. But it was to accede to the unilaterally imposed 15% rate for its proposals, it would be committing to conduct research based on a financially unsustainable model.

5. The funding Pitt receives from NSF supports critical and cutting-edge research vital to our nation's security, health and overall national advancement. Millions of Americans benefit from and depend on this research. For example:

a. **Artificial intelligence ("AI") Research**: NSF-funded AI research at Pitt is advancing large language models, intelligent information retrieval, multi-modal analysis of

massive digital information, detection of anomalous events in medical patient management, and personalized learning for K-12 students. This ongoing and future planned research develops and applies new AI in medicine, law, education, and business, furthering economic prosperity and improved health outcomes.

b. **Quantum Information Science and Engineering ("QISE") Research:** NSF-funded research in this area accelerates the integration of quantum computing into real-world scientific, business, engineering, and biomedical applications. QISE research addresses previously unsolvable problems in broad areas, such as identifying homogeneous catalysts in chemistry, simulating advanced computational fluid dynamics, enhancing medical outcomes with quantum magnetic resonance imaging, and advancing machine learning to discover new materials. Innovations from this research are potentially far reaching and include ensuring the nation's security and continued leadership and economic growth in the defense, finance, medicine, energy, and business sectors.

c. **Nanoscience and Nanoengineering:** Nano-technology research at Pitt funded by NSF has the potential for transformative impact that will improve public welfare across multiple sectors, including through healthcare innovations such as targeted gene therapies, improvement of everyday products and supporting agriculture and food safety. This is important to U.S. competitiveness, because China and the EU are heavily investing in nanotechnology. It is also important to America's national security (*e.g.*, through improved technologies for destroying chemical warfare agents, soldier protection, armored vehicles, food security, energy security, etc.). This research also supports economic growth in the U.S. given that the global nanotechnology market is projected to grow over $100 billion by 2030. U.S. leadership in nanotechnology R&D and commercialization will drive job creation and GDP growth.

d. **Energy Research**: Energy research funded by NSF in the Pitt School of Engineering is leading to advances in energy technologies, reducing energy costs through improved efficiencies, developing energy innovations and domestic energy sources, and promoting grid reliability and resilience, ensuring stable energy access for critical infrastructure.

e. **Structural Biology:** NSF funding of this research at Pitt is critical to developing experimental tools for understanding the structures of proteins inside living cells while the proteins carry out their functions. The tools to be developed will measure distances between proteins using a combination of in-cell nuclear magnetic resonance (NMR) spectroscopy and electron paramagnetic resonance (EPR) spectroscopy, two powerful approaches for tracking the structure and movement of a protein. Development of these approaches for making measurements inside live cells will have broad application, because the researchers expect to obtain (1) benchmark data for in-cell NMR and EPR that can be used by other researchers and (2) biological insight that may open new strategies for understanding protein function in cells and when bound by drugs.

f. **Genomics**: Pitt's NSF-funded Single Cell Core provides analysis of transcriptomics, proteomics and epigenomics at the single cell level. Pitt researchers provide a comprehensive approach for cell characterization and gene expression profiling for up to thousands of cells at a time. Funding in this area has helped Pitt develop the capability to characterize cell populations, cell surface markers, chromatin structure, T and B cell receptor sequences, and more on a cell-by-cell basis.

g. **Immunologic Monitoring and Cellular Products Laborato**ry: This Pitt laboratory focuses on adeno-associated virus-based gene therapies, and the general insights gained in that area also can be applied in other contexts when hyperactive immune response against self or foreign antigens creates unwanted results. Current gene therapies face several challenges associated with immune response to delivery vehicles

or therapeutic proteins. Achieving a high and persistent level of therapeutic product expression has been a challenge, often leading to failure of therapies and necessitating redosing. Pitt's mRNA-based tolerogenic vaccine research will prepare the body to receive multiple doses of gene therapies and achieve higher level of transgenes in light of body's response to gene therapies.

h. **Organoid Research Core ("ORC") at Pitt:** Organoids are a three-dimensional model recapitulating the functional, structural, and biological complexity of an organ or tumor. Organoids serve as a powerful tool for modeling human disease, and they are a unique and valuable resource for pre-clinical drug screening to improve patient outcomes through precision medicine. Pitt researchers have developed new approaches for producing liver organoids — tiny, lab-grown "twins" of human livers that have potential for disease modeling, drug discovery, and transplantation.

i. **Human-Computer Interaction ("HCI"):** NSF-funded human-computer research in the Pitt School of Computing and Information ("SCI") focuses on the interaction using virtual reality and augmented reality ("AR/VR") to improve health outcomes. Specifically, AR/VR is being used for live-streaming video feeds during image-guided medical procedures to improve precision in skull base surgery, where small gains can lead to prognosis improvement.

6. Reimbursement of Pitt's indirect costs is essential for supporting this research. NSF's cutting of indirect cost rates to 15% would preclude carrying out the kinds of research projects described in paragraph 5 in the future.

7. Pitt's campus in the Oakland neighborhood of Pittsburgh includes 1.4 million square feet of research labs either owned or leased by Pitt, for which Pitt depends upon indirect funding. Indirect costs include constructing and maintaining these state-of-the-art laboratories and other facilities required to meet the current technical requirements of advanced research and the procurement and maintenance of equipment

necessary to conduct such research, such as specialized testing environments, precision instrumentation and laboratory safety.

8. For example, with respect to the areas of research described in Paragraph 5:

a. **AI Research:** Indirect costs at Pitt support the acquisition, deployment, maintenance, and hosting of the graphics processing unit ("GPU")-based computational and data infrastructure required to train, experiment with, and deploy state-of-the-art AI and machine learning models and techniques. AI is dominated by the race to build the most sophisticated and capable models, which require GPU-based computer infrastructure to deliver massive parallelism necessary to construct these models. With reduced indirect cost, it would not be possible to provision and maintain the necessary GPU infrastructure to develop and experiment with current and future AI. Due to the rapid pace of AI, it is necessary to regularly update the infrastructure to be at the forefront. The reduction of indirect cost would be catastrophic, causing researchers at SCI to fall behind others in the AI race and lose their position as leaders in the field.

b. **QISE Research:** The University of Pittsburgh Quantum Information Core (QIC) is supported through an indirect cost return to the Pitt Schol of Engineering budgeted for $150,000 per year for the next 7 years. In addition, indirect cost reimbursement also supports a related GPU-based computer infrastructure, which is used to model and simulate the future quantum computer system under design in the QIC. Additionally, indirect cost reimbursement pays Pitt's share of the costs of the Western Pennsylvania Quantum Information Core, a laboratory facility dedicated to quantum computing research. QISE research relies on computational infrastructure to design, simulate, and optimize an increasingly large number of qubits and their arrangement in future quantum computers. Substantial GPU resources are necessary to simulate even small numbers of qubits for small application problem sizes. As access to actual

quantum hardware is limited, extraordinarily expensive, and supports only certain systems, modeling and simulation are the primary means to develop new quantum algorithms and applications. With reduced indirect cost reimbursement, the infrastructure could not be deployed nor maintained at sufficient scale to support quantum research for practical real-world applications.

c. **Nanoscience and Nanoengineering:** The University of Pittsburgh's Petersen Institute for Nanoscience and Nanoengineering ("PINSE") runs a university-wide core facility, the Nano-Fabrication and Characterization Facility ("NFCF"), which supports the fabrication and characterization of nano-sized materials and structures. Indirect cost reimbursement provides a total of approximately $617,000 annually to support its operations and equipment. Maintenance of and upgrades to the high-fidelity equipment in the NFCF is necessary to support researchers and drive the cutting edge in nano innovation. Operation of the NFCF equipment depends on highly skilled technical staff in the NFCF with many years of experience who would be irreplaceable if we were unable to maintain these positions. Nanomaterials research requires state-of-the-art equipment and facilities, such as a transmission electron microscope (TEM), for high-resolution images of thin specimens, revealing their internal structure, and new mass spectrometers to identify compounds such as synthetic proteins via molecular weight determination.

d. **Energy Research**: Energy research innovation often requires highly specialized facilities and large-scale equipment funded as indirect costs. These include Pitt's Electric Power Technologies and Micro-energy Lab, which is designed to be rapidly reconfigurable to match immensely varied grid configurations and conditions from traditional radial feeder systems to novel microgrid designs. Researchers can perform AC and DC system studies at industrially-relevant voltages, conduct independent

tests of equipment, and conduct design, rapid prototyping, and testing at the highest level.

e. **Structural Biology:** Indirect cost reimbursement not only supports the maintenance of the specialized equipment necessary for such work, but also the highly skilled personnel necessary for the operation of these multimillion-dollar instruments.

f. **Genomics**: Indirect cost reimbursement supports operation and maintenance of highly-technical instruments in the Pitt Center for Advanced Genomics.

g. I**mmunologic Monitoring and Cellular Products Laboratory:** This research depends on expensive instruments and complex, regulated and certified production capabilities funded as indirect costs.

h. **ORC:** The ORC at Pitt has a growing collection of patient-derived organoids ("PDOs"), and the experienced staff provides high-quality training in organoid development and culture, and consultation services to assist with experimental design, execution, and data analysis. The necessary instruments, complex production capabilities and staff as funded as indirect costs.

i. **HCI:** SCI's Bellefield Avenue facility is used for research on virtual and augmented reality in medical surgeries. This space provides a dark studio for AR/VR production, supports multiple HoloLens devices, and provides fabrication capabilities, including a 3D printer, for HCI researchers. With reduced indirect costs, this laboratory would not be available, and SCI has no other available location that could support this research. The initiative using AR/VR for surgery would be severely disrupted without access to this laboratory.

9. Physical facilities costs are one of the largest components of indirect costs. This includes not only the usual costs of constructing and maintaining buildings where research occurs, but the very high costs of outfitting and maintaining specialized laboratory space, which can require special security, advanced HVAC systems, specialized plumbing, electrical systems and waste management, as well as

specialized laboratory equipment. The features and amount of space available to researchers have a direct and obvious impact on the nature and the amount of research that can be done at Pitt. For example,

a. Facility space is necessary to provide offices, labs, and meeting areas to house personnel for research including quantum computing, AI, and HCI. Indirect costs pay for part of the Bellefield Ave. facility, which was designed to foster interdisciplinary collaboration. With a reduction in the indirect cost rate, the space would likely need to be vacated, which would irreparably constrain research including the recruitment and retention of faculty members, doctoral students, and postdocs.

b. The PINSE NFCF is housed in Benedum Hall, the flagship home of the School of Engineering. Its laboratories occupy more than 20,000 square feet. Indirect cost reimbursement helps cover infrastructure and renovation costs as well as capital equipment purchases for this facility to remain at the forefront of science. Indirect funds are vital for research infrastructure projects such as a fire suppression system in Chervon Hall, where the Department of Chemistry is housed, which is essential for protecting the researchers, students, building infrastructure, and the surrounding residential neighborhood from catastrophic chemical fires while performing NSF-funded research, including nanoscience research.

c. The School of Engineering leases over 20,000 square feet of space at the Pittsburgh Energy Innovation Center for its energy researchers (including those working on research involving the electric grid, energy storage (battery), infrastructure sensing and magnetics, and materials science in energy applications). The rent for this facility as well as personnel and other infrastructural costs is funded with indirect cost reimbursement.

10. In addition, indirect costs fund the administration of awards, including staff who ensure compliance with a vast number of regulatory mandates from agencies such as NSF. These mandates serve many important functions, including ensuring research integrity; properly managing and disposing of chemical and biological agents and other materials used in research; managing specialized procurement and security requirements for sensitive research; managing funds; preventing technologies and other sensitive

national security information from being inappropriately accessed by foreign adversaries; providing the high level of cybersecurity, data storage, and computing environments mandated for regulated data; ensuring compliance with specialized security protocols and safety standards; maintaining facility accreditation and equipment calibration to meet research quality and security standards; and preventing financial conflicts of interest.

11. Recovery of Pitt's indirect costs is based on predetermined rates that have been contractually negotiated with the federal government. Through fiscal year 2025, the predetermined indirect cost rate for the University of Pittsburgh is 59%.

12. The impact of a reduction in the indirect cost rate to 15% would be devastating. Of the $39 million in NSF expenses incurred by Pitt in fiscal year 2024, approximately $29 million was spent for direct costs and $10 million was incurred for indirect costs. Similarly, in fiscal year 2025, Pitt expects to spend $29 million for NSF direct costs, while $11 million will be incurred for indirect costs (total of $40 million). Over the next five years, Pitt anticipates spending an average of $32 million from the NSF for annual direct costs. Based on the predetermined indirect cost rate of 59%, which was agreed upon by the federal government, Pitt expects to receive approximately $12 annually, on average, in indirect cost recovery over the next five years. (The $12 million in indirect cost reimbursement is lower than 59% of the $32 million of total direct costs because the negotiated indirect rate of 59% applies to the modified total direct cost calculated in accordance with 2 C.F.R. Part 200, which is lower than the total direct costs.)

13. If—contrary to what Pitt has negotiated with the federal government, the indirect cost rate was reduced to 15% for new awards, that would over several years reduce Pitt's anticipated annual indirect cost recovery by $8 million, to approximately $4 million.

14. This reduction would have deeply damaging effects on Pitt's ability to conduct research from day one. Many of Pitt's current research projects will be forced to slow down or cease abruptly if we cannot apply for renewals at the 59% indirect cost rate. Pitt has multiple NSF-funded projects for which a stop or delay could cause harm to animal populations or other vital living collections or suspension would cause a critical loss of unique or irreplaceable materials or data. A suspension or slow-down in management

and maintenance of equipment, instruments, or research infrastructure also could create damage or endanger safety.

15. Pitt has for decades relied on the payment of indirect costs. And until now, we have been able to rely on the well-established process for negotiating indirect cost rates with the government to inform our budgeting and planning. Operating budgets rely on an estimate of both direct and indirect sponsored funding to plan for annual staffing needs (*e.g.*, post-docs, PhD students, and other research staff), infrastructure support (*e.g.*, IT networks, regulatory compliance, and grant management support), and facility and equipment purchases. And in some cases, Pitt has long-term obligations—for example, such as tenured faculty salaries, staff, admitted graduate and professional school students—and it relies on budgeted grant funding, including associated indirect cost recovery, to fulfill these commitments. This multi-year budgeting process assumes the availability or possibility of grant renewals on roughly similar terms – and certainly at the negotiated indirect cost rate – as had been previously available. A reduction in the indirect cost rate for new NSF awards to 15% will put Pitt's existing grant funding and budgetary assumptions under severe strain, which will intensify quickly as work under existing awards wraps up and will not be replaced by new awards or renewals with indirect cost reimbursement based on Pitt's predetermined rate of 59%.

16. Disruptions to Pitt's research will also have negative effects in the Pittsburgh area, the Commonwealth of Pennsylvania and the broader region. Of Pitt's 16,000 employees, 96% are Pennsylvania residents. Pitt collaborates with state and local partners to help solve regional challenges through joint research and innovation. Pitt's research also fuels spending in the regional economy, including by driving discoveries that launch new ventures, attract private investment, and make a positive social impact. A massive reduction in Pitt's research budget would seriously jeopardize these contributions to the local region. Due to financial pressures, including the uncertainty surrounding federal research funding, Pitt implemented a hiring freeze for faculty and staff, effective March 10, 2025, which is in effect through at least the end of the fiscal year (June 30, 2025).

17. Finally, slowdowns or halts in research by Pitt and other American universities will allow competitor nations that are maintaining their investments in research to surpass the United States on this front, threatening both our Nation's national security and its economic dominance. For example, Pitt's research in artificial intelligence and quantum computing directly aligns with the call in President Trump's March 26, 2025, letter to Michael Kratsios, Director of the White House Office of Science and Technology Policy, for the United States to vault to the front of the pack in the development and deployment of artificial intelligence and to establish a foundation for national quantum supremacy. Slowdowns or halts in research also will discourage young people from going into research, causing a national brain drain. As a result of recent executive orders and government actions, Pitt has experienced a reduction in the admission of graduate students and multiple post-doctoral researchers have lost their grant-funded support. It has been widely reported that Europe is aggressively recruiting American scientists.

18. It is not feasible or sustainable for Pitt to use other revenue sources to offset shortfalls in indirect cost recovery. As a non-profit institution, Pitt reinvests nearly all its revenue into mission-critical activities, leaving little margin to absorb unexpected funding gaps. In other words, unlike for-profit organizations, Pitt does not generate significant surpluses that could be redirected without impacting core academic priorities such as educational programs and financial aid support for students. Absorbing the cost of a lower indirect cost rate, even if it were possible, would create long-term budget pressures on Pitt — which would in turn force reductions in key investments supporting Pitt's faculty, students, staff, research, and teaching infrastructure, as well as other critical activities needed to maintain Pitt's academic excellence. So even if Pitt could "cover" some of the indirect costs previously funded by NSF, it could do so only by negatively affecting other critical goals central to the institution's mission.

19. If Pitt can no longer apply for NSF grants because it is unable to accept the new indirect cost rate cap – a risk that would impact all our NSF grants –significant cost-cutting measures would need to be adopted—and quickly. Pitt cannot "float" all the indirect costs it would likely lose coverage for – nor could it float NSF grants altogether if it is not able to accept the 15% cap – so some research projects would need to be terminated altogether, and others would need to be scaled down or pared back significantly. The

process of identifying these cuts would need to begin immediately, and layoffs, closures, and research pauses or contractions would follow soon thereafter. Cutting back on Pitt's research in fields such as nanoscience, quantum, and AI will also have long-term implications on national security and the American economy.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on May 6, 2025, at Pittsburgh, Pennsylvania

/s/ Rob A. Rutenbar
Rob A. Rutenbar